

## **Children's 5 a Day Campaign Market Research**

**Background:** The California Department of Health Services and the California Department of Education encourage children to eat fruit and vegetables in order to promote health, normal growth and development, and educational attainment. Although the operation of the *5 a Day--for Better Health Campaign* (1988-91) by the Department of Health Services targeted only adults, it had revealed that fruit and vegetable consumption among children was a concern of parents, educators, health professionals, and members of the food industry. Strategic planning conducted by the Department early in 1992 suggested that there would be significant external support for a fruit and vegetable campaign targeted at children. Based on this assessment, the Department determined to allocate funds for three years (1992-95) to develop a campaign especially aimed at children. Fourth and fifth graders aged 9 to 11 years, and their parents, were selected as the groups to target.

Five to 9 servings per day of fruits and vegetables is the amount recommended for children by the *California Daily Food Guide*, the joint dietary guidance policy adopted by the departments of Health Services, Education, and Aging in 1990. (This amount is also recommended in the *Dietary Guidelines for Americans*, issued by the U.S. Department of Agriculture and the U.S. Department of Health and Human Services.) The 1989 and 1991 California Dietary Practices Surveys had indicated that adults consumed 3.8 and 3.9 servings, respectively. This slightly exceeded the 3.5 servings estimated by the National Cancer Institute as the average number of servings that adult Americans consumed daily in 1991. In California, about 35% of adults ate the 5 serving minimum, while in the country as a whole, just 23% did (1991). Since all three surveys were conducted during the summer, daily adult consumption on an annual basis may be even lower, falling considerably short of the 5 serving minimum recommended for good health.

Therefore, it seemed likely that children's consumption would also be lower than recommended. Whether this would be the case, whether intake would differ among groups of children, and what the magnitude and severity of the problem would be were unknown. What could be done to encourage children to eat more fruits and vegetables was also unknown.

### **1. Purpose of the Market Research**

**Need for Market Research:** Once it was decided to develop a campaign targeting children, the search for more information began. We found that there were no data available about the number of servings of fruits and vegetables that California school children consume. A literature review found no published data for any large segment of American school children. Personal communications with staff at the U.S. Department of Agriculture confirmed that serving information had not been calculated from the most recent National Food Consumption Survey (1987-88), and there were no plans to do so. Personal communications with the National Center for Health Statistics confirmed that there were no plans to analyze dietary data for the

other large national nutrition survey (the third National Health and Nutrition Examination Survey, 1988-93) until at least 1993. When or if the number of servings eaten by children would be available was not known.

In 1992 a literature search found little information about what children thought about eating more fruits and vegetables and the kind of interventions they would respond to best.

Some unpublished data were located. A comparative study of two groups of middle class adolescent girls in the San Francisco Bay Area in 1983 and in 1991 found that fruit and vegetable consumption had declined almost 50% in only eight years, to only 1.6 servings (Crawford, University of California, Berkeley, 1992). The Youth Risk Behavior Survey, a collaborative effort of the California Department of Education and the federal Centers for Disease Control and Prevention, showed that only 3% of participating high school students in California reported eating the recommended minimum of 5 servings of fruit and vegetables daily. Summary data comparing the National Food Consumption Surveys of 1977-78 and 1987-88 indicated slight drops in the weight of fruit and vegetables consumed (servings per day were not calculated).

Pre-publication papers reporting results of focus group studies for the *Gimme 5!* school-based research project were shared with the Department of Health Services by researchers at the Medical College of Georgia. These were helpful but they did not fully describe what elements a fruit and vegetable campaign for children should include.

In summary, data necessary to design a fruit and vegetable campaign for children in the fourth and fifth grades were found not to be available from any source. Unfortunately, funds allocated by the Department of Health Services were insufficient to support both market research and the development of campaign materials. The interagency agreement from the Department of Education to support market research for the Health Services' campaign provided essential and timely assistance to develop a truly consumer-driven intervention program.

## **2. Activities Conducted through the Interagency Agreement**

The principal purpose of the Interagency Agreement with the Department of Education was for the Department of Health Services to conduct consumer research with children in the targeted age group.

Through the California Public Health Foundation which administers the California 5 a Day Campaign, the Department of Health Services contracted with two market research companies to conduct qualitative and-quantitative research with children. Staff of the Nutrition and Cancer Prevention Program developed specifications for the research, identified and obtained bids from companies known to be competent in the two fields, developed and negotiated contracts, oversaw the work, and approved preparation of the final reports. This process involved the selection of Kidfacts Research, of Farmington Hills, Michigan, to conduct a series of eight focus groups, and Fleishman-Hillard Research, Inc., St. Louis, Missouri, to conduct a mail and phone survey

of children's fruit and vegetable consumption, knowledge, and opinions. The qualitative results of the focus groups were used to inform questions subsequently included in the quantitative mail and phone surveys.

The complete reports prepared by the contractors are found in Appendices 1 and 2. Children's responses to the art and slogans produced by creative vendors are reported in Appendix 1, with discussion on pages 21-29 and depictions in Appendix C. The special follow-up survey with nonresponders is reported in Appendix 2, with findings on pages 101-111 and the questionnaire on pages 283-287.

**Oversight by Nutrition and Cancer Prevention Staff:** The Director of Marketing for the Children's Campaign supervised the contract with Kidfacts Research. This involved: developing specific research objectives and the discussion guide for the focus groups; arranging for creative production of original art and slogans to test with the children; collecting a variety of additional collateral materials to test with the children (games, activities, cookbooks, brochures, posters, videos); providing staff support to the vendor to set up facilities and materials for the focus groups; and working closely with the vendor to progressively focus the children's discussion as to what the Campaign should include. Consultants from the Department of Education and other partners in the Children's Campaign were invited to observe all of the focus groups.

The focus group work began in November 1992 and ended in January 1993.

The Chief of the Nutrition and Cancer Prevention Program supervised the contract with Fleishman-Hillard Research. This involved: developing specific research questions for the survey; identifying appropriate dietary survey methodologies and instruments; overseeing development and revision of the data collection instruments based on field test results; obtaining consultation from an independent statistician about sampling approaches, statistical tests, and weighting of results in accord with California's 1990 U.S. Census; overseeing adaptation of the survey instruments into Spanish (including the use of culturally appropriate fruit and vegetable food items); assuring explicit quality assurance measures for data collection and coding of responses; and overseeing the conduct of a special survey of non-respondents.

When lower than expected response rates occurred, the Chief augmented the contract to include a special study to track non-respondents, identify causes of non-response, and assess possible bias to the findings.

Between December and June, conference calls with the contractor occurred several times each week, with adjustments made in the work as events dictated. The Project Officer from the Department of Education was kept apprised verbally of the progress and consulted when research problems arose.

### 3. Expenditures

The funds provided by the Department of Education supported the above major contracts, in addition to three smaller ones with vendors of creative services (art and slogans) used in the focus groups.

Additional funds were contributed by the California Avocado Commission and Sunkist Growers to underwrite the two focus groups with Latino children. The special survey of non-respondents was funded by the Nutrition and Cancer Prevention Program.

Funds were insufficient to conduct additional focus groups with education personnel or to perform message testing with children in educational settings, which had been called for in the Interagency Agreement. However, round table groups were conducted in November and December with teachers and school nutrition staff from five Northern California school districts. The guided discussion elicited in-school experience using the School Idea and Resource Kit and collateral materials that had been developed using focus group and survey findings.

### 4. Highlights of Findings

Major findings of the focus group studies included:

- \* **Need and direction that a campaign should take:** The great majority of children already know and agree that fruit and vegetables are healthy, but they do not know why or how many servings to have every day. The variety of fruit and vegetable items in their diet appears quite limited, and very few appear to eat 5 servings. They are surprised that they should eat as many as 5 servings.
- \* **Attitude about having a campaign:** Children were positive and intrigued at the idea of a fruit and vegetable campaign, which they felt would make a difference in getting children to eat more fruits and vegetables. They had very specific responses to different ideas for and examples of elements that a campaign should include, and they definitely wanted it to be fun, active, and pervasive everywhere they went. They wanted the campaign to include music, fantasy, celebrities, and advertising, and to "do something" in their school. It was clear that graphics for the campaign must offer a stylish, "breakthrough" appearance or risk being ignored.
- \* **Differences among groups of children:** Responses to slogans varied somewhat between boys and girls and Latino and non-Latino children. Non-Latino children especially had very strong opinions about the type of art and characters that would appeal to kids their age. Children in the major metropolitan areas of the State appeared to be more style-conscious than those in the Central Valley, with children in Southern California apparently the most exposed to urban problems and fast-paced lifestyles. The slogan, "5 a Day--Power Play!!!", was preferred

by children in one of the first groups and it bore up in subsequent sessions as being the most generally appealing to both boys and girls, Latino and non-Latino.

- \* **Cultural variability:** There appear to be significant cultural differences between Spanish-speaking Latino children and non-Latino children, including different perspectives about slogans and messages, spokespersons, peer and family influence, and independence in food selection and preparation. We found that many Spanish-speaking Latino children seemed comfortable with the Campaign being in English at school, but that they wanted take-home materials to be in both English and Spanish, in part so that others in their household could learn the English words for equivalent Spanish. (For example, they were very enthusiastic about having a cookbook with kids' recipes in both English and Spanish.) They also said they would like to have a special campaign slogan in Spanish.

Appendix 1, *Five-A-Day Child Research*, contains a complete summary, the detailed findings, discussion guide and description of methods used, and recommendations from the eight focus groups.

The quantitative research included a mail survey to obtain dietary and school nutrition program information and a follow-up phone survey with the same children to obtain further information about attitudes and related food practices. Two groups of children drawn from existing household market research panels were involved. The General Market panel of children was drawn from eligible English-speaking households across the State, while the Latino panel was made up of all eligible children from less acculturated households in the greater Los Angeles and San Francisco Bay Area.

Major findings of the quantitative research included:

- \* **Consumption of fruit and vegetables was low.** Two out of three California children did not eat the recommended 5 servings of fruit and vegetables daily, and the mean intake was only 3.4 servings, which is only two-thirds of the amount needed. Compared to adults, fewer children appeared to eat the recommended minimum of 5 servings daily, and the mean intake appeared to be less. However, differences in survey methods, technical complexities of obtaining dietary data from children, and the effects of seasonality are variables that may have impacted the comparability of results.
- \* **School nutrition programs were associated with higher consumption of fruit and vegetables.** Both those children who recalled having had a nutrition lesson in class and those who ate lunch at school almost every day, ate eat significantly more fruits and vegetables daily than those who did not. Significant proportions of children (38% of the General Market sample and 29% of the Latino sample) did not recall having a nutrition lesson. While the National School Lunch Program appeared to be widely available to children and successful in reaching

those most in need due to low economic status of their household, only 40% got their lunch from the school cafeteria, and less than one-third did so every day.

- \* **There were many reasons for low consumption patterns.** Skipping meals and eating incomplete meals and snacks contributed to low fruit and vegetable consumption. Most fruits and vegetables were eaten at meals, rather than as snacks. Fully one-quarter of kids skipped breakfast altogether, and over a two-day period, fully half had no fruit/vegetable at breakfast, 20% had none at lunch, and 15% had none even at dinner. Snacks were common among children, with a quarter snacking in the morning, well over half snacking after school, and over a third snacking after dinner. Although the afternoon snack was the most likely to include fruit/vegetables, fewer than a third did. For morning and evening snacks, only about 15% were likely to include a fruit, vegetable, or juice.

Two-thirds of children said that they preferred other foods to fruits and vegetables when eating at fast food restaurants, and half preferred eating other foods when playing with friends. Children ate a very small variety of fruits and vegetables, and vegetables and salads were largely confined to dinner. Almost 60% could not remember trying any new fruit or vegetable recently. Among households in the lower income level (below \$40,000 annually), parents appeared somewhat more likely to tell the child that the fruits and vegetables they like cost too much.

- \* **There were also many opportunities to increase consumption.** Parents appeared to want their children to eat more fruit and vegetables. Fully 85% of children said that they asked parents for certain fruits and vegetables, and over 90% of these children indicated that parents usually honored their request. Three-quarters liked best the way fruits and vegetables were fixed at home, and two-thirds denied that their parents told them that fruits and vegetables cost too much or failed to bring home the items they like best.

Nearly nine out of ten children thought that fruit and vegetables were very important to their health, and almost two-thirds thought that they should eat more than they were. Children were more knowledgeable than adults about the amount to eat, with over one-third thinking that 5 servings was the amount to eat, while for adults only one-quarter believed in 1991 that this was the amount they need.

Children tended to be fixing their meals and snacks more independently as they got older. Fully 40% prepared their own breakfast, a quarter fixed their own lunch, and nearly two-thirds fixed their own afternoon snack.

Children responded favorably to slogans that emphasized eating fruits and vegetables to stay healthier, and they liked the idea of celebrity spokespersons, with Michael Jordan and Arnold Schwarzenegger ranking highest.

Appendix 2, *Fruit and Vegetable Consumption among Children in California*, contains a complete summary and interpretive analysis of the mail and phone surveys, the detailed findings and weighted data tables, descriptions of methods and statistics, and recommendations from the consultant. The findings for the Latino samples are discussed fully.

Appendix 3, *The California Dietary Practices Survey of Children, Ages 9 to 11 Years: Focus on Fruits and Vegetables--Key Findings*, contains highlights of the quantitative research. It includes discussion of the major findings; the significance, complexities, and limitations of the survey; and implications for implementation of the Children's 5 a Day Campaign. Also included in Appendix 3 are graphics of key findings and the first Department of Health Services press release which reports survey results. The materials in Appendix 3 provided the news hooks for launching the Campaign in July 1993.

## **5. Accomplishments**

The most significant achievement was to obtain for the first time in California an assessment of what children are actually eating, how selected programs may impact them, and their likely responses to a variety of interventions intended to improve the healthfulness of their every day food intake. This research was conducted quickly and at very low cost. This research appears to be the first of its kind to be conducted anywhere in the United States.

The findings have been critical in determining the tone, the look, and the type of elements developed for the California Children's 5 a Day Campaign. The research helped staff day-by-day in directing the work of consultants and making innumerable decisions that now appear to have been the right choices from among possible alternatives. For example, the Program determined to contract with a significantly more expensive design and creative firm for the art and characters used in the Campaign because the children in the focus groups responded so strongly to different looks and the need for "breakthrough" visuals was inescapable. Similarly, results of the pilot test with education personnel, as well as desk reviews by adult program leaders from community youth organizations, have indicated that when used in the field, the elements of the Campaign are well received by the children. These elements have embedded within them the learning obtained from the focus groups.

Preliminary results of the research also have been shared widely in a variety of channels. This includes: mass media, national professional meetings, trade and professional organization newspapers and magazines, university researchers, other state health departments, and the U.S. Department of Agriculture. Relative to the National 5 a Day Program of the National Cancer Institute and the Produce for Better Health Foundation, the findings have underscored the need for conducting a targeted Children's 5 a Day Campaign designed very differently from the existing national efforts aimed at adults.

The research appears to have tapped into pre-existing interest and concern about what children are eating, and it is providing a focus for mobilizing efforts by adult intermediaries in all the channels through which the Campaign is being delivered to children. Among professionals in

food marketing, the research provides credibility to the Campaign and is likely to be instrumental in its being adopted more widely or expanded to better meet the needs of children.

## **6. Challenges**

**Methodologic Issues:** By far the greatest challenge was conducting the dietary survey within time and resource parameters while also honoring current scientific thinking and practice for dietary survey methods appropriate for children of this age. Specifically, we needed to obtain a representative cross-section of the State's children, obtain parental consent, secure as valid and unbiased dietary information as possible, and obtain a high response rate for two different groups of children. Dietary surveys of children are generally quite costly and time-consuming, and resources often limit the size of the surveys. In short, we found no examples of methods for children suitable to use in public health.

Since there also were few relevant reports published about conducting dietary surveys by mail or by phone with children, we consulted with experts in the field and then worked with our market research firm to apply the most current scientific advice available. We designed all the instruments and questions from scratch and pilot tested them. Even so, the response burden for the mail survey turned out to reduce participation, which then raised significant concerns about nonrespondent bias and necessitated a special follow-up survey.

However, in spite of these problems, the dietary results appear reasonable. For example, the returned surveys of two days of fruit and vegetable intake reported by the children look as though the children understood how to fill out the forms, and the type and quantities of items reported do not look unusual. The special follow-up study of nonrespondents failed to identify any characteristics that are likely to make this group of children different from respondents.

The greatest concern remains that while the cohort of children has been weighted to closely profile the 1990 Census demographics of children in California, there are other inherent characteristics of these households which likely cause dietary consumption to be better than in totally randomly selected households. For this reason, accepting these results as indicative of all California children may lead to false complacency about how well kids are eating.

**Surveying harder-to-reach market segments:** The second challenge was surveying less acculturated Spanish-speaking households. Since response rates were unexpectedly low, the number of households enrolled in the sub-contractor's Hispanic market research panels was insufficient to provide the planned number of children aged 9 to 11 years. The more serious issue was that the mail survey we developed was not a suitable instrument for these children. Not only did it result in a low response rate, but the amounts of fruit and vegetables reported were unreasonably high. However, the data about attitudes and dietary practices in the home appeared consistent with expectations about children in traditional Latino households.



Methodologic issues are discussed in detail in Appendix 2, pages 79-128, and summarized in Appendix 3, pages 1-3. If repeated in the future, mail surveys with Latino children should be very streamlined, pictorial, or possibly administered through a telephone interview.

## **7. Recommendations and Discussion**

- \* Conduct focus groups at strategic points in the further development of the California Children's 5 a Day Campaign.** The focus group studies yielded highly relevant qualitative information and were relatively easy and inexpensive to conduct. It would be very beneficial also to conduct this type of research with parents and with adult intermediaries in various channels being used in the Campaign. Qualitative research would be valuable as a routine activity conducted at major decision points when new campaign elements or strategies are being developed. While focus groups are being used more often in health campaigns, they are still an underutilized formative research technique.
- \* Use commercial market research companies to conduct dietary surveys.** While dietary surveys are notoriously difficult to design and conduct, the performance of the firm used for the mail and phone surveys was exemplary, and the cost was affordable. Most dietary surveys have been done for research purposes through universities. The business- and results-orientation of commercial companies can be a great help in maintaining focus, keeping on timeline, staying within budget, and striving for complete customer satisfaction and responsiveness.
- \* Select vendors carefully, and work closely with them.** There can be great variability in the performance of market research companies. It appears critical to spend time locating vendors that specialize in the market segment being studied, have excellent reputations, and are either already expert or seriously involved in closely related areas of food, diet, and health research. In addition, program staff must be clear and prioritize what they want to learn, plan to spend time and resources preparing for the sessions or the project, be prepared to alter expectations and activities as new learning is acquired, and include the vendor as a team member in critically analyzing results and considering program implications.
- \* Continue conducting streamlined dietary surveys, and work with universities or the federal government to validate new dietary survey methods for children and teenagers.** The lack of suitable survey methods and the resulting paucity of data about what children are eating have inhibited the development of the type of large scale nutrition interventions that appear to be needed to improve children's health. The findings of the California surveys support the need for conducting more research to assess the nature and magnitude of diet-related problems that children are experiencing. However, rather than waiting for

methods to be perfected in centers of higher learning, our experience suggests that well-designed surveys using state-of-the-art methods require a small investment of resources that could generate a major return in terms of new healthy eating promotions targeted to kids in a timely manner.

There has been considerable interest in both the new survey methods and the findings of the 1993 California Dietary Practices Survey of Children. The experience of this research should be prepared as a paper for publication in order to advance this field. Validation and reliability studies should be conducted comparing the new, short methods with more expensive traditional interview techniques. There are several university settings in California that could easily conduct this research.

- \* **Repeat dietary surveys with children 9 to 11 years of age in 1995 and 1997 in order to track trends in this age cohort, and add cohorts of middle school and high school youngsters.** These data provide the only statewide dietary information about children. When repeated, they will provide a barometer to gauge how the rapidly-changing lifestyles and influences on children are impacting healthy eating. If expanded to include cohorts of older children (and at the same time fruit and vegetable promotions are designed and implemented), then it will be possible to track whether the generation of kids graduating from high school in the year 2000 is moving toward meeting at least one of the major *Healthy People 2000* dietary targets.

The Department of Health Services plans to conduct the California Dietary Practices Survey: Focus on Fruits and Vegetables every two years with adults through the end of the decade. A second advantage of conducting regular biennial dietary surveys of children would be the opportunity to capitalize on the information about several related population cohorts. For example, in the 1993 California Dietary Practices Survey, a number of new questions aimed at parents of school-aged children were added. These results could help to better target intervention strategies and messages to families, as well as to identify needed institutional changes and policy initiatives.

The Nutrition and Cancer Prevention Program of the California Department of Health Services appreciates the opportunity made possible by the California Department of Education through this Interagency Agreement to conduct research essential to the successful conduct of the Children's 5 a Day Campaign. We look forward to continuing to work together in partnership in order to improve the health of California's children.